

WAKAHARA**Application No. 10/642,303****December 5, 2005**

2. (previously presented) An abnormality diagnosis apparatus as in claim 1, wherein the flow rate control means includes at least one of a valve and a pump inserted in the circulation line system.
3. (previously presented) An abnormality diagnosis apparatus as in claim 1, wherein the abnormality diagnosis means determines the existence of the abnormality of the flow rate control means based on one of:
- an amount of change in the measured coolant temperature measured through the coolant temperature sensor; and
 - a rate of change in the measured coolant temperature measured through the coolant temperature sensor.
4. (previously presented) An abnormality diagnosis apparatus as in claim 1, wherein the abnormality diagnosis means sets an abnormality diagnosis condition, which is used to determine the existence of the abnormality of the flow rate control means, based on:
- a parameter, which relates to an amount of heat generated by the internal combustion engine; and
 - a parameter, which relates to an amount of heat released from the coolant.
5. (previously presented) An abnormality diagnosis apparatus as in claim 4, wherein: